## Space Weather Forecast

Issued on Thursday, 11 November 2021 at 00:18 Local

**This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales**

**Space Weather Forecast Headline: No significant activity expected.**

**Analysis of Space Weather Activity over past 24 hours**

**Solar Activity:** Solar Activity was at very low levels, with occasional low Background-class activity. There are currently three sunspot regions visible, with two single, uni-polar, mature sunspots in the northwest and southeast of the disc. The other sunspot group in the northeast showed some growth in it's main intermediate spot.

No Earth-directed CMEs were observed in available imagery.

**Solar Wind / Geomagnetic Activity:** The solar wind speed was at slightly elevated levels. The total magnetic field strength of the solar wind was weak, with no significant negative deflections in the important north-south direction. Resultant geomagnetic activity was predominantly Quiet (Kp 1 to 2) with an Unsettled (Kp 3) interval at 10/0000-0300 UTC.

**Energetic Particles / Solar Radiation:** No solar radiation storms were observed.

**Four-Day Space Weather Forecast Summary**

**Solar Activity:** Solar activity is expected to be generally very low, with a chance of Common-class flares.

**Solar Wind / Geomagnetic Activity:** There are no Earth-directed CMEs in the forecast. A weak CME is expected to pass ahead of Earth, with a weak glancing blow just possible, most likely on day 1 (11th). However, confidence is very low for this and any potential impacts expected to be minimal.

Solar wind speeds are near slow ambient levels, but some slight enhancements are possible through the period. These most likely from weak effects from a small coronal hole later in the period. Geomagnetic activity is expected to be mostly Quiet with occasional Unsettled intervals, and just a low risk of isolated Active intervals, mainly from any possible weak coronal hole influence on day 3.

**Energetic Particles / Solar Radiation:** No solar radiation storms are expected.

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# Met Office Space Weather Forecast

**Geomagnetic Storms:**

| Geo-Magnetic Storm Probability (Exceedance) | Level | Past 24 Hours (Yes/No) | Day 1 (00-24 UTC) (%) | Day 2 (00-24 UTC) (%) | Day 3 (00-24 UTC) (%) | Day 4 (00-24 UTC) (%) |
|---|---|---|---|---|---|---|
| Minor or Moderate | G1 to G2 | No | 1 | 1 | 5 | 1 |
| Strong | G3 | No | 1 | 1 | 1 | 1 |
| Severe | G4 | No | 1 | 1 | 1 | 1 |
| Extreme | G5 | No | 1 | 1 | 1 | 1 |

**Radio Blackouts - X Ray Flares:**

| X Ray Flares Probability | Level | Past 24 Hours (Yes/No) | Day 1 (00-24 UTC) (%) | Day 2 (00-24 UTC) (%) | Day 3 (00-24 UTC) (%) | Day 4 (00-24 UTC) (%) |
|---|---|---|---|---|---|---|
| Active | R1-R2 M Class | No | 1 | 5 | 5 | 1 |
| Very Active | R3 to R5 X | No | 1 | 1 | 1 | 1 |

**Solar Radiation Storms - (High Energy Protons):**

| Radiation Storms Probability (Exceedance) | Level ($cm^{-2}$ $sr^{-1}$ $s^{-1}$) | Past 24 Hours (Yes/No) | Day 1 (00-24 UTC) (%) | Day 2 (00-24 UTC) (%) | Day 3 (00-24 UTC) (%) | Day 4 (00-24 UTC) (%) |
|---|---|---|---|---|---|---|
| Active | ≥ S1 | No | 1 | 1 | 1 | 1 |
| Very Active | ≥ S3 * | No | 1 | 1 | 1 | 1 |

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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